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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,289	06/30/2003	Naoki Matsushima	16869N-084500US	2971

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SAN FRANCISCO, CA 94111-3834

EXAMINER
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LIN, TINA M

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/611,289

Applicant(s)

MATSUSHIMA ET AL.

Examiner

Tina M. Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 182 is/are allowed.
- 6) ☒ Claim(s) 9-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/30/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,823,145 to Shirai et al in view of U.S. Patent 6,654,393 to Hamasaki et al.

In regards to claims 13-17, Shirai et al discloses a semiconductor modulator (31) on a carrier (32) secured to a base member (33). Shirai et al further discloses two high frequency transmission line or a micro-strip line (42, 37) formed on the carrier/sub-carrier for transmitting a high frequency electrical signal to the modulator and a grounding electrode electrically connected through a hole (47) to the back of the carrier, which is made of CuW (metal). (Figure 1a, Figure 1b, Abstract)

Shirai et al fails to specifically disclose the carrier to be formed of a semiconductor material, but does disclose the carrier material to be made of AlN. However, Hamasaki et al discloses a semiconductor element, such as a laser to be formed on a semiconductor submount, such as aluminum nitride (AlN) or Silicon (Si) before it is mounted to a metallic member. (Brief Summary of Text) Therefore, although Shirai et al does not specifically state the carrier material to be a semiconductor material, Hamasaki et al teaches that aluminum nitride is a semiconductor material and therefore, it would have been obvious at the time the invention was made to a

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person having ordinary skill in the art to have used aluminum nitride since it is a semiconductor substrate material.

Shirai et al further fails to specifically disclose the high frequency transmission line to be a coplanar waveguide, but does disclose the transmission line to be a microstrip line. However, Chang et al discloses that a “microstrip-line structure for transmission are all adopted as the coplanar waveguide structure applicable to a light frequency range.” (Summary of the Invention) Therefore, Chang et al teaches that a microstrip line is a type of coplanar waveguide and it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a microstrip line as a high frequency transmission line.

In regards to claims 16 and 17, Shirai et al discloses a first substrate (32) with an optical element (31) and a microstrip line (42) for transmitting a high frequency electric signal to the optical element. Shirai et al further discloses a second substrate (33) with a second microstrip line (37).

#### *Allowable Subject Matter*

Claims 1-8 allowed. The prior art of record fails to disclose or reasonably suggest an optical module with a high transmission frequency line and an optical element mounted on a carrier, a dielectric substrate with a second high frequency transmission line, where the first and second transmission lines are coplanar waveguides and connected through a conductor where, where the second waveguide formed on the output side with a distance between the signal wiring conductor of the transmission line and the ground layer is made longer as compared with the first coplanar waveguide or is formed on the output side without providing the ground layer.

The documents submitted by applicant in the Information Disclosure Statement have been considered and made of record. Note attached copy of form PTO-1449. None of the documents submitted by Applicant discloses or reasonably suggests the allowable subject matter discussed above.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. None of the documents cited by the Examiner discloses or reasonably suggests the allowable subject matter discussed above.

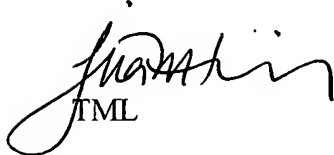
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Lin whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

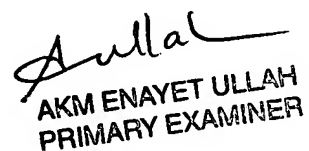
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Handwritten signature of TML.



Handwritten signature of Akim Enayet Ullah.

AKIM ENAYET ULLAH  
PRIMARY EXAMINER